BOOK REVIEWS

The Scientific Study of Personality. By H. J. Eysenck. (Pp. 320 including index ; illustrated. 30s.) London : Routledge & Kegan Paul. 1952.

This book is a coordinating report of experimental studies of personality carried out since the publication of the author's earlier book *Dimensions of Personality*. The experimental work reported has been carried out by a number of investigators working under Dr. Eysenck's coordinating direction. It is important to ask, "For whom is this new volume intended?" The phraseology of factor analysis forms a major part of the technical language in which the book is written. In spite of the popular exposition of factor analysis in one of the earlier chapters, it is doubtful whether the reader who is not statistically sophisticated will be able to follow the main arguments. He will thus be in the position of having to accept or reject the various conclusions from a dogmatic point of view rather than a scientific one. On the other hand, most critical, statistically sophisticated readers will require much fuller information than is usually presented here.

In spite of these criticisms the book is both interesting and stimulating to the academic psychologist. It raises a number of fundamental points concerning the scientific method in psychology, but the answers which the author gives will by no means be universally acceptable. As to the clinical psychologist, from a practical point of view, it is doubtful whether Dr. Eysenck has anything to offer immediately. However, his investigations and speculations form a valuable contribution towards a more effective definition and measurement of the dimensions of personality. There remain many loose ends and many psychologists will not accept his general approach and technique of analysis without grave reservations.

Eysenck begins his book with a discussion of the scientific method in personality research. His approach is deliberately atomistic and he takes physics as his model of the scientific method in action. It is at least a debatable point whether the form of scientific method suitable for investigating the complexities and subtleties of human behaviour should be identical with that which has proved so successful in the exact sciences. Although Eysenck supports his thesis by quotations from eminent scientists who are not psychologists, it would be easy to bring together equally forceful arguments against many of the points he makes. In fact, if the standards of scientific detachment which are demanded by him are to be met, then this task is a necessary one. In spite of some appearances to the contrary, Eysenck does present his case in a detached, scientific manner, remaining neutral where he considers the evidence for a particular conclusion is incomplete. His challenging statement

that there is no definite evidence to show that psychotherapy produces a favourable effect falls in this category.

Eysenck then passes on to consider the dimensional approach to the study of personality, still drawing strongly on the analogy with physics. In this context he outlines briefly the method of factor analysis which forms a major tool in the investigations reported and in their presentation. He is careful to point out that no hypothesis can ever be proved. It can only be consistent with a set of observations, and its efficacy is to be judged by the way such an hypothesis enables us to predict future events. In an attempt to render factor analysis a more effective tool in a "hypothetico-deductive" system Eysenck has developed a procedure known as criterion analysis. (Those who are familiar with factor analysis will be aware of the difficulty of equating factors in different studies. Eysenck's criterion analysis is an attempt to minimize this difficulty.) The method is closely bound up with the series of inferences which are made concerning the statistical properties of a single continuum or dimension, for it is from deductions of this type that Eysenck has claimed to have isolated the three main independent personality dimensions of neuroticism, introversion-extraversion, and psychoticism. By means of sets of tests he also claims to be able to measure neuroticism almost as effectively as one may measure intelligence. The groups of tests developed for measuring the other two dimensions may be described as adequate although their effectiveness is not explicitly specified. It is perhaps important to point out that no single test is considered to be adequate to define and provide an effective measure along one of these dimensions. The whole technique depends on using a battery or group of tests.

Considerable space is devoted to reviewing the evidence for the neurotic dimension and elaborating its operational definition. Stated briefly, the evidence consists of deducing, within a variety of contexts, a number of independent factors in terms of which one may account for the statistical relations between a number of traits or directly measured behaviour characteristics. Using a dichotomous psychiatric classification into normal or neurotic it is possible to refine the information supplied by individual factor measurements, and to identify such refined measurements as belonging to this factor of neuroticism. Many types of information may be "fed into" such an investigation and it is impossible to list all of these in a brief review. However, amongst the more effective sources of information are the following, each of which is discussed in some detail : ratings of personality traits ; questionnaires ; inventories of annoyances, interests, and worries ; food aversions ; manual dexterity test scores ; measures of

"level of aspiration"; dark adaptation; Rorschach scores; body build; and measures of "autonomic imbalance". A number of studies by Eysenck and his co-workers are reviewed, each of these lending support to the idea of a scientifically useful dimension of variation implied in the term neuroticism.

Passing on to discuss the relative effects of heredity and environment on neuroticism, Eysenck makes a short critical review of the use of fraternal and identical twins in this context. Although many of his criticisms may be correct, Eysenck's approach leads him to a more effective differentiation between fraternal and identical twins and this is followed by a report of a factorial study of the various dimensions of personality as shown in fraternal and identical twins together with a control group of neurotic children. The group of fraternal twins shows a higher neurotic score on the personality inventory than the identical twins and the latter also appear more inclined to lie. In general, the identical twin group appears to show a wider range of variation in mental stability than the fraternal group (as implied by the separate test scores and by the inferred factor measurements of neuroticism). Providing certain assumptions are made, it is further claimed that about 81% of the variations of neuroticism may be regarded as an inherited characteristic. This is an important conclusion for it is directly opposed to an earlier suggestion by Newman, Freeman, and Holtzinger (1937) that identical twins are not usually more alike than fraternal twins in personality characteristics. Eysenck concludes this chapter with two more "attacks". The first deals with the current fashion to over-emphasize the effects of environment. The second returns to the question of methodology by pointing out that correlation and causation must not be confused with one another and that in testing a theory one should endeavour to make deductions preferably in such a form as to decide conclusively between alternative hypotheses.

The next chapter is concerned with the psychotic dimension. Eysenck brings our knowledge of Kretschmer's position up to date, reviewing his recent contributions in this field. By giving a somewhat different group of tests to a population consisting of 100 normals, 50 manic-depressives, and 50 schizophrenics and then applying the same technique of analysis as those used previously to establish the dimension of neuroticism, the following conclusions were reached: (1) The psychotic states form a continuum with normal mental states. (2) Schizothymia-cyclothymia, put forward by Kretschmer, cannot be regarded as a separate dimension. This leads on to the development of an interesting threefold classification of mental disorders which can be illustrated by taking the average scores for the three groups either on two selected tests or on two hypothetical "tests" which "maximize" the discrimination between the groups. In this, as in the dimension of neuroticism, even if one does not accept this form of "dimensional analysis", the performance on these various tests, which significantly differentiate between the main classes of mental disorder, might serve as valuable aids to teaching some of the main objective symptoms.

Eysenck also discusses at some length the applications of dimensional analysis, drawing on a number of field studies by his colleagues. These studies are concerned with the following areas of investigation: (1) the direction of changes consequent upon pre-frontal leucotomy; (2) the employability of mental defectives; (3) work adjustment of unskilled workers; (4) selection of students and nurses; (5) sense of humour and popularity in teachers. Each of these studies warrants examination in considerably more detail than the information actually presented allows. It does not seem desirable to pick out individual conclusions from each study for presentation here.

The book concludes with a brief essay on the organization of personality, setting out, once more, Eysenck's predilection for atomism. Eysenck then returns to consider the question of personality organization. "Using our experimentally demonstrated three factors of neuroticism, psychoticism, and extraversion-introversion as three axes of a coordinate system, we can now locate a given patient in terms of his exact position within this system." In terms of this system to ask the question, "Is this person psychotic or neurotic?" is as sensible as it would be to ask, "Is this patient intelligent or tall?". Many independent dimensions of variation are necessary effectively to describe a person, and no claim is made that the present three dimensions are the only ones into which personality can be analyzed.

Eysenck ends with a discussion of some of the logical and factual difficulties in the way of rendering objective and scientific the sort of studies he has outlined. These include, above all, the difficulty of reproducing within defined limits any experimental situation. (It is this which, in the reviewer's opinion, is the main difference between the so-called exact sciences and the biological sciences, including psychology. It is a difference which demands that the scientific method must be considered in relation to a particular context.) Eysenck has also come to realize the "even slight changes in the test may produce profound changes in the results". Although conditions may be standardized, the psychological condition of the subject is less under experimental control. Nevertheless, if the evidence is accepted at its face value, the objective procedures put forward can lead to a surprising degree of precision in certain of these dimensions. The detailed analysis of the individual tests in relation to the performance of the individuals who carry them out is a task for the future. However, Eysenck believes that this task should go hand in hand with the work of establishing the main dimensions and refining the methods of measuring variation along these dimensions. So far, it is the second problem which has preoccupied Dr. Eysenck in this volume.

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Mule Spinners' Cancer. Second Interim Report of the Joint Advisory Committee of the Cotton Industry. (6d. net.) Published by H.M. Stationery Office.

Mule spinners' cancer is still a problem in the spinning area of Lancashire. Although the number of mule spinners has decreased from 48,000 in 1926 to 22,000